

Capital Structure Trends in a Cement Engineering Company

Venkateswararao. Podile, R.Padmavathy, N. Bindu Madhavi

Abstract: Capital structure means the mix of equity and debt. The Finance manager is required to bring balance between different sources of financial resources for maximising return in any company by not altering risk mix. A best capital structure is required to optimize the owner's Profits in any company. In this research paper, effort is put to examine the capital structure Trends in a Cement Engineering Company namely The Ramco Cements Limited. The Ramco Cements Limited is a main company in Ramco Group. This is a most popular group in Southern India. It is mainly located in Chennai. The important product of this organization is Portland cement. The cement production capacity is 16.45 million tons per year. This Company has a yearly turnover of Rupees 5174.71 Crores as per 2018-19 Accounts. The gross assets of the company are Rupees 8108.21 Crores. In this research paper capital structure Trends in the company for a period of 10 years are examined. Different kinds of Leverages are examined. Debt- Equity (D-E) Ratio, Proprietary Ratio(PR), Solvency Ratio(SR), Fixed Assets(FA) to Net worth(NW) Ratio, Fixed Assets Ratio (FAR), Current Assets(CA) to Proprietary Funds (PF) Ratio and Interest Coverage Ratio(ICR) are prepared for ten years period. Hypotheses' testing was done through Chi-square. Outcome of the present research will be useful for finding weaknesses in capital structure of the company.

Keywords: Capital Structure, DCL, DOL, Interest Coverage(IC) Ratio.

I. INTRODUCTION

Capital structure means the mix of equity and debt. The financial manager is required to bring balance between different sources of funds for maximising return in any company by not altering risk mix. A best capital structure is required to optimize the owner's Profits in any company. In this research paper, effort is put to examine the capital structure Trends in a Cement Engineering Company namely The Ramco Cements Limited. The Ramco Cements Limited is a main company in Ramco Group. This is a most popular group in Southern India. It is mainly located in Chennai. The important product of this organization is Portland cement. The cement production capacity is 16.45 million tons per year. The company stands in fifth position in terms cement production in India. In southern India, Ramco Super grade brand became popular. The company also manufactures Dry Mortar products and Ready Mix Concrete. This Company has a yearly turnover of Rupees 5174.71 Crores as per

Revised Manuscript Received on March 04, 2020.

* Correspondence Author

Dr.Venkateswararao.Podile*, Professor, MBA Department, KL University, Vaddeswaram, India, vrapodile@kluniversity.in

Dr.R.Padmavathy, Associate Professor, Department of Commerce, Montessori Kalasala, Vijayawada, India, padmavathi.raavi@yahoo.com

Dr.N.Bindu Madhavi, Assistant Professor, MBA Department, KL University, Vaddeswaram, India, dr.bindumadhavi@kluniversity.in

2018-19 Accounts. The gross assets of the cement company are Rupees 8108.21 Crores.

II. REVIEW OF LITERATURE

Venkateswararao.Podile et al., made capital structure analysis in M.G.Metallic Springs Pvt. Ltd (2018)¹, Naga Hanuman Solvent Oils Private Limited (2018)², Raghunath Dye Chem Pvt. Ltd. (2018)³, Nagas Elastomer Works (2018)⁴ and Tulasi Seeds Pvt. Ltd (2018)⁵. Majority studies on capital structure were confined to MSMEs. This study particularly deals with Capital Structure Trends in a Cement Engineering Enterprise, which is the manufacturer of Portland cement.

III. OBJECTIVES

The main objective of present research is to identify the capital structure Trends in a Cement Engineering Company namely The Ramco Cements Limited. The particular objectives of the research are the following.

1. To study the trends in capital structure of The Ramco Cements Limited during the study period.
2. To examine the position of DOL, DFL and DCL in The Ramco Cements Limited during the study period.
3. To observe the status of long term solvency of The Ramco Cements Limited during study period.
4. To assess the position of financial expenses in The Ramco Cements Limited during study period.
5. To propose suggestions for betterment decisions pertaining to capital structure, if essential.

IV. HYPOTHESES

H₀₁: DOL in The Ramco Cements Limited is uniform during the study period.

H₀₂: DFL in The Ramco Cements Limited is uniform during the study period.

H₀₃: DCL in The Ramco Cements Limited is uniform during the study period.

H₀₄: Debt - Equity (D-E) Ratio in The Ramco Cements Limited is uniform during the study period.

H₀₅: Proprietary Ratio (PR) in The Ramco Cements Limited is uniform during the study period.

H₀₆: Solvency Ratio (SR) in The Ramco Cements Limited is uniform during the study period..

H₀₇: Fixed Assets (FA) to Net-worth (NW) Ratio in The Ramco Cements Limited is uniform during the study period.

H₀₈: Fixed Assets Ratio (FAR) in The Ramco Cements Limited is uniform during the study period.

Capital Structure Trends in a Cement Engineering Company

H₀₉: Current Assets (CA) to Proprietary Funds (PF) Ratio in The Ramco Cements Limited is uniform during the study period.

H₁₀: Interest Coverage Ratio (ICR) in The Ramco Cements Limited is uniform during the study period.

V. METHODOLOGY

The present research is primarily based data collected through secondary sources. The data is gathered from the financial statements of the company which included balance sheet, trading account and profit and loss (P&L) account of The Ramco Cements Limited. The study period is ten financial years from 2009-10 to 2018-19. The data collected is analyzed by percentages and certain relevant ratios pertained to capital structure of the company. DOL, DFL and DCL are calculated during the period of study for doing leverage analysis. The ratios calculated include Debt – Equity (D-E) Ratio, Proprietary Ratio (PR), Solvency Ratio (SR), Fixed Assets (FA) to Net worth (NW) Ratio, Fixed Assets

(FA) Ratio, Current Assets (CA) to Proprietary Funds (PF) Ratio and Interest Coverage (ICR). Chi-square test is used for testing the hypotheses formed.

VI. CAPITAL STRUCTURE COMPOSITION

The data presented in table-1 show the fact that Share capital's percentage in total equity capital had changed between 0.5 and 1.5 during study period. It is also found that reserves and surplus's percentage in total equity capital has ranged between 98.5 and 99.5 during the study period. Total equity capital's percentage in total capital has changed between 29.6 and 57 during the study period. It is also found that long term debt's percentage in total debt had changed between 38.2 and 85.2 during the study period. On the other hand, short term debt's percentage in total debt has changed between 14.8 and 61.8 during the study period. Total debt capital's percentage in total capital has changed between 43 and 70.4 during the study period.

Table-1: Capital structure composition of The Ramco Cements Limited during 2009-2010 to 2018-2019

(Figures in Rs. Crores)

Particulars	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Equity capital										
Capital	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.6	23.6
% of Total Equity capital	1.5	1.4	1.2	1.0	1.0	0.9	0.8	0.6	0.6	0.5
Reserves & Surplus	1534.4	1710.7	2026.6	2347.0	2458.3	2621.4	3068.8	3717.7	4018.6	4436.5
% of Total Equity capital	98.5	98.6	98.8	99.0	99.0	99.1	99.2	99.4	99.4	99.5
Total Equity Capital	1558.2	1734.5	2050.4	2370.8	2482.1	2645.2	3092.6	3741.5	4042.2	4460.1
% of Total Capital	29.6	30.4	33.8	36.6	36.1	37.8	44.0	53.4	57.0	55.0
Debt Capital										
Long Term Debt	3151.6	2531.7	2502.5	2488.2	2681.8	2933.0	2448.2	1246.9	1197.4	1600.4
% of Total Debt capital	85.2	63.8	62.4	60.7	61.1	67.3	62.3	38.2	39.3	43.9
Short Term Debt	546.2	1438.4	1505.3	1612.4	1704.7	1423.4	1484.4	2020.5	1850.9	2047.7
% Total Debt capital	14.8	36.2	37.6	39.3	38.9	32.7	37.7	61.8	60.7	56.1
Total Debt Capital	3697.8	3970.1	4007.8	4100.6	4386.5	4356.4	3932.6	3267.4	3048.3	3648.1
% of Total Capital	70.4	69.6	66.2	63.4	63.9	62.2	56.0	46.6	43.0	45.0
Total Capital	5256.1	5704.6	6058.2	6471.4	6868.6	7001.6	7025.2	7008.9	7090.5	8108.2

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

VII. LEVERAGE ANALYSIS

Leverage analysis is helpful in knowing the ability of the company to magnify the effect of changes in sales over EBIT, the effect of changes in EBIT over Net Income and the effect of changes in sales over Net Income.

The DOL has changed between -70.7 and 115 during the study period. Operating leverage (OL) is favorable during 2011, 2012, 2014 and 2018 as DOL is over and above one. Operating leverage is un-favorable during other six years as DOL is smaller than one. It is found in the significance test that DOL is not uniform during the study period.

Degree of Operating Leverage

Table-2: Degree of Operating Leverage (DOL)

(Figures in Percentages)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Percentage change in EBIT	4.0	-35.9	59.6	10.0	-57.9	70.7	60.5	8.0	-11.5	-9.2
Percentage Change in Sales	13.2	-6.4	24.3	17.8	-2.7	-1.0	-1.2	25.0	-0.1	12.4
DOL	0.3	5.6	2.5	0.6	21.4	-70.7	-50.4	0.3	115.0	-0.7

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for DOL = 8871.6. Critical value of χ^2 is 16.919 at 5% level of Significance. H₀₁ is rejected.

Degree of Financial Leverage

The DFL has changed between -0.7 and 2.2 during the study period. Financial leverage is favorable during 2011, 2012, 2014, 2015, 2016, 2017 and 2018 as DFL is over and above

one. Financial leverage is un-favorable during 2010 and 2013 as DFL is less than one. It was also found that DFL is neither unfavorable nor favorable during 2019. It is observed in the significance test that DFL is uniform during the study period.

Table-3: Degree of Financial Leverage

(Figures in Percentages)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Percentage change in Net income	-2.7	-40.3	82.5	4.8	-65.9	76.0	130.3	16.3	-14.4	-9.0
Percentage change in EBIT	4.0	-35.9	59.6	10.0	-57.9	70.7	60.5	8.0	-11.5	-9.2
DFL	-0.7	1.1	1.4	0.5	1.1	1.1	2.2	2.0	1.3	1.0

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for DFL = 5.2. Critical value of χ^2 is 16.919 at 5% level of Significance. H_0 is accepted.

Degree of Combined Leverage

The DCL has changed between -108.6 and 144.0 during the study period. Combined leverage is favorable during 2011,

2012, 2014 and 2018 as DCL is over and above one. Combined leverage is un-favorable during other six years as DCL is smaller than one. It is observed in the significance test that DCL is not uniform during the study period.

Table-4: Degree of Combined Leverage

(Figures in Percentages)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Percentage change in Net income	-2.7	-40.3	82.5	4.8	-65.9	76.0	130.3	16.3	-14.4	-9.0
Percentage Change in Sales	13.2	-6.4	24.3	17.8	-2.7	-1.0	-1.2	25.0	-0.1	12.4
DCL	-0.2	6.3	3.4	0.3	24.4	-76.0	-108.6	0.7	144.0	-0.7

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for DCL = 60858.7. Critical value of χ^2 is 16.919 at 5% level of Significance. H_0 is rejected.

VIII. CAPITAL STRUCTURE RATIOS

Capital structure ratios are helpful in understanding long term solvency of the company. Long term solvency indicates the ability of the company to meet obligations of long-term.

The D-E ratio of the company has changed between 0.8 during 2018 and 2019 and 2.4 during 2010. It is observed in the significance test that D-E ratio is uniform during the study period. D-E ratio was always in normal range implying good margin of safety for lenders.

Debt-Equity Ratio

Table-5: Debt-Equity Ratio

(Figures in Rs. Crores)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Outside funds	3697.8	3970.1	4007.8	4100.6	4386.5	4356.4	3932.6	3267.4	3048.3	3648.1
Share Holders funds	1558.2	1734.5	2050.4	2370.8	2482.1	2645.2	3092.6	3741.5	4042.2	4460.1
Debt-Equity Ratio	2.4	2.3	2.0	1.7	1.8	1.6	1.3	0.9	0.8	0.8

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for D-E Ratio = 2.0. Critical value of χ^2 is 16.919 at 5% level of Significance. H_0 is accepted.

Proprietary Ratio

The PR of the Company ranged between 0.3 during 2010, 2011 and 2012 and 0.6 during 2018 and 2019. It is observed

in the significance test that PR is uniform during the study period. PR is always less than 0.6 during all the years of the study implying average long term solvency situation.

Table-6: Proprietary Ratio

(Figures in Rs. Crores)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Share Holders funds	1558.2	1734.5	2050.4	2370.8	2482.1	2645.2	3092.6	3741.5	4042.2	4460.1
Total Assets	5256.1	5704.6	6058.2	6471.4	6868.6	7001.6	7025.2	7008.9	7090.5	8108.2
Proprietary Ratio	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.6	0.6

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for PR = 0.3. Critical value of χ^2 is 16.919 at 5% level of Significance. H_0 is accepted.

Solvency Ratio

The SR of the company changed between 0.4 during 2018 and 2019 and 0.7 during 2010, 2011 and 2012. It is observed

in the significance test that SR is uniform during the the study period. SR is always between 0.4 and 0.7 during all the years of the study implying average long term solvency.

Capital Structure Trends in a Cement Engineering Company

Table-7: Solvency Ratio

(Figures in Rs. Crores)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Liabilities to outsiders	3697.8	3970.1	4007.8	4100.6	4386.5	4356.4	3932.6	3267.4	3048.3	3648.1
Total Assets	5256.1	5704.6	6058.2	6471.4	6868.6	7001.6	7025.2	7008.9	7090.5	8108.2
Solvency Ratio	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.4	0.4

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for SR = 0.2. Critical value of χ^2 is 16.919 at 5% level of Significance. H_{06} is accepted.

Fixed Assets to Net worth Ratio

The FA to NW ratio of the company changed between 1.4 during 2018 and 2.8 during 2011. It is observed in the

significance test that FA to NW ratio is uniform during the study period. FA to NW ratio has decreased during the last six years of study, which is a good phenomenon.

Table-8: Fixed Assets to Net worth Ratio

(Figures in Rs. Crores)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed Assets	4098.9	4779.6	5222.5	5232.5	5619.0	5885.3	5723.1	5590.3	5792.1	6732.4
Share Holders funds	1558.2	1734.5	2050.4	2370.8	2482.1	2645.2	3092.6	3741.5	4042.2	4460.1
Ratio	2.6	2.8	2.5	2.2	2.3	2.2	1.9	1.5	1.4	1.5

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for FA to NW ratio = 1.1. Critical value of χ^2 is 16.919 at 5% level of Significance. H_{07} is accepted.

Fixed Assets Ratio

The FAR of the company ranged between 0.9 during 2010 and 1.1 during all other years except one year. It is 1.0 during 2016. It is observed in the significance test that FAR is

uniform during the study period. FAR is always equal to or less than 1.1 during all the years of the study period implying that long term funds are sufficient to finance fixed assets. This is a good situation.

Table-9: Fixed Assets Ratio

(Figures in Rs. Crores)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed Assets	4098.9	4779.6	5222.5	5232.5	5619.0	5885.3	5723.1	5590.3	5792.1	6732.4
Total Long Term funds	4709.8	4266.2	4552.9	4859	5163.9	5578.2	5540.8	4988.4	5239.6	6060.5
Fixed Assets Ratio	0.9	1.1	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.1

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for FAR = 0. Critical value of χ^2 is 16.919 at 5% level of Significance. H_{08} is accepted.

Current Assets to Proprietary Funds Ratio

The CA to PF ratio of the company ranged between 0.3 during 2018 and 2019 and 0.7 during 2010. It is observed in

the significance test that CA to PF ratio is uniform during the study period.

Table-10: Current Assets to Proprietary Funds Ratio

(Figures in Rs. Crores)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Current Assets	1135.7	925.1	1035.8	1238.9	1249.5	1116.3	1302.1	1418.6	1298.3	1375.8
Share Holders funds	1558.2	1734.5	2050.4	2370.8	2482.1	2645.2	3092.6	3741.5	4042.2	4460.1
Ratio	0.7	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for CA to PF ratio = 0.3. Critical value of χ^2 is 16.919 at 5% level of Significance. H_{09} is accepted.

Interest Coverage Ratio

The ICR of the company ranged between 1.9 during 2014 and 15.1 during 2019. It is observed in the significance test that

ICR is not uniform during the study period. ICR is high during all the study period implying high margin of safety to lenders. It is also found that it is very high during last three years.

Table-11: Interest Coverage Ratio

(Figures in Rs. Crores)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
EBIT	681.4	436.6	696.7	766.5	322.4	550.2	883.2	953.7	843.9	766.5
Interest	150.9	139.3	158.5	178.5	168.1	193.8	180.2	103.5	59.2	50.9
Interest Coverage Ratio	4.5	3.1	4.4	4.3	1.9	2.8	4.9	9.2	14.3	15.1

Source: Annual Reports of The Ramco Cements Limited from 2009-10 to 2018-19

χ^2 for ICR = 31.7. Critical value of χ^2 is 16.919 at 5% level of Significance. H_{10} is rejected.

IX. CONCLUSION

OL is favorable in four years, FL is favorable in seven years and CL is favorable in four years during the study period. DFL is uniform during the study period. DOL and DCL are not uniform during the study period. All capital structure ratios except ICR are uniform during the study period. D-E ratio is always in normal range implying good margin of safety for lenders. PR and SR indicated average long term solvency. FA to NW ratio has decreased during the last six years of study, which is a good phenomenon. FAR is always equal to or less than 1.1 during entire study period implying that long term funds are sufficient to finance fixed assets. High ICR during entire study period implies high margin of safety for lenders. To conclude, there is good Capital Structure Management in The Ramco Cements Limited.

REFERENCES

1. Dr. Venkateswararao.P and Dr. HVS.Sree. Ch, "Capital Structure Analysis of a Small Enterprise - A Case Study of M. G. Metallic Springs Pvt. Ltd.", International Journal of Research in Engineering, IT and Social Sciences, Vol.8, Issue.8, 2018, pp.149-154.
2. Dr. Venkateswararao.P, Fr. K.Anil and HVS.Sree. Ch, "Capital Structure Analysis of a Small Enterprise - A Case Study of Naga Hanuman Solvent Oils Private Limited", International Journal of Scientific Research and Review, Vol.7, Issue.8, 2018, pp.548-555.
3. Dr. Venkateswararao.P, Fr. K.Anil and HVS.Sree. Ch, "Capital Structure Analysis of A Small Enterprise - A Case Study Of Raghunath Dye Chem Pvt. Ltd.", Asian Journal of Multidimensional Research, Vol.7, Issue.8, 2018, pp.281-292.
4. Dr. Venkateswararao.P, Fr. K.Anil and HVS.Sree. Ch, "Capital Structure Analysis of a Micro and Proprietary Enterprise - A Case Study of Nagas Elastomer Works ", International Journal of Research in Engineering, IT and Social Sciences, Vol.8, Issue.8, 2018, pp.269-275.
5. Dr. Venkateswararao.P, Fr. K.Anil and HVS.Sree. Ch, "Capital Structure Analysis of a Large Enterprise - A Case Study of Tulasi Seeds Pvt. Ltd.", Journal of Emerging Technologies and Innovative Research, Vol.5, Issue.8, 2018, pp.973-979.

AUTHORS PROFILE



Dr. Venkateswararao. Podile, is a Professor of Management at KL Deemed to be University, Andhra Pradesh, India. He was a Former Associate Professor at Central University of South Bihar, Gaya. He had total teaching Experience of 19 years. He had contributed 159 Research papers. Out of which 76 research Papers

are published in Peer reviewed and UGC listed journals, 6 papers were published as chapters in edited ISBN Books and papers presented in seminars are 77. He had carried out 5 Research Projects as Principal Investigator for prestigious organizations including University Grants Commission (3), National Commission for Women, New Delhi (1) and Indian Council for Social Sciences Research (ICSSR), Ministry of Human Resource Development (1). He is presently carrying out a Research Project of Department of Science and Technology, (DST) Government of India. He had also carried out 8 consultancy Projects for renowned institutions including Entrepreneurship Development Institute of India, Ahmadabad (1), Institute of Public Enterprise, Hyderabad (1), National Institute for Micro, Small and Medium Enterprises, Hyderabad (5) and Andhra Pradesh Information Technology Academy (1).



Dr. R. Padmavathy, is working as Associate Professor in Montessori Mahila Kalasala, Vijayawada. She had 28 years of teaching experience. She had worked as Principal for 5 years. She was a member of Senate of Krishna University for 5 years. She had completed 2 UGC Research Projects. She had published 14 papers in

international Journals. She had presented 64 papers in various seminars. She has attended 17 workshops, 8 training courses, 3 Faculty Development Programmes, 8 training courses and 3 UGC refresher courses. She is presently heading the commerce department in college.



Dr. N. Bindu Madhavi is the faculty of Marketing in KL Business School. She has academic and administrative experience of 19 years with 18 years of teaching and 1 year industry experience. Apart from teaching she is contributing to the University as Associate Dean - Academics and Assistant Director – KLU Department of Open and Distance Learning. She has done her MBA in marketing, M.Com in Banking. She received her Ph.D degree from Acharya Nagarjuna University. She got qualified in UGC NET (National Eligibility Test) and APSET (AP State level Eligibility Test). She is member of Board of Studies and Department Academic Committee at KL Business School. She is Senior Life Time Member of the Professional Society "International Society for Research and Development". She has presented papers in more than 50 national and international conferences. She delivered Invited Lectures on Management related topics in various Management Institutions on several occasions. Besides, she has a number of research papers in reputed National and International journals.